CableLabs®

December 20, 2019

Ex Parte

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Unlicensed Use of the 6 GHz Band*, ET Docket No. 18-295; *Expanding Flexible Use in Mid-Band Spectrum between 3.7 and 24 GHz*, GN Docket No. 17-183

Dear Ms. Dortch:

On December 18, 2019, Mariam Sorond, Rob Alderfer, John Kim, Mark Poletti (by phone), and Roy Sun (by phone) of CableLabs, Chris Helzer of Quadra Partners, LLC (representing CableLabs), and Chris Szymanski of Broadcom Inc., met with the OET staff listed below regarding the above-referenced proceedings. During the meeting, CableLabs presented data from operational Wi-Fi networks and analysis which demonstrates that low power indoor (LPI) Wi-Fi devices can coexist with Fixed Service (FS) links in the 6 GHz band without causing harmful interference and without using automated frequency coordination (AFC).

First, CableLabs highlighted that cable operators have invested significant resources to deploy gigabit broadband throughout their footprints and are working toward delivery of 10 gigabit speeds. Because most consumers access their broadband service through Wi-Fi, it is critical that Wi-Fi speeds keep pace with the wired speeds delivered to homes and businesses. To that end, the Commission should designate additional unlicensed spectrum across the full 1200 megahertz of the 6 GHz band to support the delivery of multi-gigabit, low latency, highly reliable broadband.

Second, CableLabs supports the Commission's efforts to ensure incumbent operations are protected against harmful interference as it allows unlicensed access to the 6 GHz band. Accordingly, CableLabs described the dataset on Wi-Fi airtime utilization that informed its analysis. This real-world data from 500,000 Wi-Fi access points (APs) measured over 10 days shows that 90 percent of the time, Wi-Fi airtime utilization is 1 percent or less, while the weighted average Wi-Fi airtime utilization is 0.4 percent. These very low measured airtime utilization numbers further reduce the risk of harmful interference to FS operations in the 6 GHz band.

CableLabs then described how it used the full measured airtime utilization dataset as one input—combined with conservative ranges for other Wi-Fi parameters (as opposed to averages or other point estimates), and distributing Wi-Fi APs vertically based on actual LIDAR building data for New York City—to simulate the aggregate real-

world effect of LPI Wi-Fi on coexistence with FS. The results of the simulation demonstrate that LPI Wi-Fi operation, even in worst-case conditions, will maintain FS link reliability and will not cause harmful interference to FS even at a conservative -6 dB I/N threshold.

Finally, Mr. Helzer discussed a sensitivity analysis demonstrating that even in unproven corner cases in which a Wi-Fi AP caused an unrealistically high 10 or 20 dB noise rise - which was not observed in CableLabs' simulation - there would be no impact on the Fixed Service. Factoring in Wi-Fi airtime utilization, the probability of a LPI Wi-Fi device and a FS device operating on the same channel, and the probability distribution of LPI Wi-Fi power levels, the analysis concludes that FS link availability would remain unchanged.

The real-world airtime utilization data, simulation of LPI Wi-Fi and FS coexistence, and sensitivity analysis all demonstrate that LPI Wi-Fi and FS links can coexist successfully in the 6 GHz band without the need for AFC. The Commission has a strong record on which it can support continued advancement of broadband access technology by making 6 GHz available for LPI unlicensed operations across all 1200 MHz without AFC.

Please address any questions regarding the foregoing to the undersigned.

Sincerely,

Rob Alderfer
Vice President of Technology Policy

cc: Meeting Participants

Enclosure

Meeting Participants

Julius Knapp (FCC OET)
Ira Keltz (FCC OET)
Michael Ha (FCC OET)
Nicholas Oros (FCC OET)
Barbara Pavon (FCC OET)
Hugh VanTuyl (FCC OET)

Mariam Sorond (CableLabs)
Rob Alderfer (CableLabs)
John Kim (CableLabs)
Chris Helzer (Quadra Partners LLC, representing CableLabs)
Mark Poletti (CableLabs, via phone)
Roy Sun (CableLabs, via phone)

Chris Szymanski (Broadcom)